June 26, 2017

REMEDIAL INVESTIGATION / FEASIBILITY STUDY

Progress Report #11 — May 2017

Prepared for

COLUMBIA FALLS ALUMINUM COMPANY, LLC
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APPENDIX

1.0 INTRODUCTION

This Progress Report (Report) presents a summary of activities completed during the period of May 2017, on behalf of Columbia Falls Aluminum Company, LLC (CFAC), for the Remedial Investigation / Feasibility Study (RI/FS) being performed at the Anaconda Aluminum Co. Columbia Falls Reduction Plant (a/k/a Columbia Falls Aluminum Plant) generally located near Columbia Falls in Flathead County, Montana ("Site"). The RI/FS is being conducted pursuant to the Administrative Settlement Agreement and Order on Consent (AOC) dated November 30, 2015 between CFAC and the United States Environmental Protection Agency (USEPA) (CERCLA Docket No. 08-2016-0002).

This Report provides a description of the actions that have been taken to comply with the AOC during the reporting period and describes work planned for the upcoming reporting period, including an updated project schedule as Appendix A. This report also provides updates regarding the availability of any new, validated sampling data received by CFAC during the reporting period. Lastly, this Report provides an update on any scope revisions and/or project delays encountered and solutions implemented to address any changes.

2.0 WORK COMPLETED

This Section provides a summary of activities completed or ongoing in May 2017.

2.1 Submittal of Response to Comments on Draft Phase I Site Characterization Data Summary Report and Screening Level Ecological Risk Assessment Summary Report

CFAC/Roux received comments from USEPA on the draft Phase I Site Characterization Data Summary Report (Data Summary Report) and draft Screening Level Ecological Risk Assessment (SLERA) on April 14, 2017, and received comments from MDEQ on April 17, 2017. On May 26, 2017, CFAC/Roux submitted responses to the comments provided by USEPA and MDEQ on the Data Summary Report and the SLERA. The responses to comments are being reviewed by USEPA and MDEQ. Further updates regarding the review and comment process, and next steps to finalize the Phase I Data Summary Report and SLERA will be addressed during the next reporting period.

2.2 Groundwater and Surface Water Sampling - Round Three Results Summary

The third round of groundwater and surface water sampling was completed in early April 2017. Results of the round three sampling are being evaluated along with round one and round two data. The results of round three will be provided to USEPA and MDEQ in a summary e-mail and a report summarizing the results of all four groundwater sampling events will be provided after round four of groundwater sampling is complete.

2.3 Concrete Sampling

Sampling of concrete from the CFAC Main Plant Building, Pot Room #1 was completed by Hydrometrics field personnel on March 10, 2017, in accordance with the Concrete Sampling and Analysis Plan dated August 31, 2016 (Concrete SAP). The sampling activities were designed to determine if the concrete is suitable for use as subgrade backfill as part of the ongoing demolition activities being conducted by Calbag Resources, LLC (Calbag). As part of the demolition, Calbag also plans on sampling various building materials to support waste characterization, handling, and disposal as needed throughout the demolition. The sampling and management of waste is described in Calbag's Waste Management Plan for Building 1 (WMP), which has been approved by the Montana Department of Environmental Quality (MDEQ).

During this reporting period, Hydrometrics personnel completed the additional sampling outlined in Concrete SAP Modification #1 from the CFAC Main Plant Building, Pot Room #1 from May 2, 2017 to May 4, 2017. Fifteen concrete samples, collected as both chip samples and core samples utilizing different cleaning techniques, were collected from the proposed locations and analyzed for the parameters outlined in Concrete SAP Field Modification #1. The results of the additional concrete sampling, and an evaluation of the results utilizing different collection methods and cleaning methods were submitted in a draft letter to USEPA on May 19, 2017, titled "Re: CFAC Main Plant Building Pot Room #1 – Crushed Concrete Backfill Approval Request."

Based on the results and the evaluation outlined in the letter, Roux/CFAC requested that broom-cleaned ground floor and structural concrete from Pot Room #1 be approved for use as subgrade fill material as part of the ongoing Site demolition activities being performed by Calbag. As of May 31, 2017, the letter was still being reviewed by USEPA.

2.4 Field Modifications

Two field modifications were submitted to USEPA in the May 2017 reporting period, summarizing changes to the Phase I SAP and SAP Addendum. The two field modifications include:

1. Phase I SAP Modification #10 (May 24, 2017) – The modification proposed the collection of surficial soil samples from the four asbestos landfills across the Site. Each landfill will be divided into grids, not to exceed 3,000 square feet for each grid cell. One composite soil sample will be collected from each grid, for an estimated total of 56 composite samples to be collected and analyzed. The work will evaluate the potential presence of asbestos in surface soil of the four asbestos landfills.

2. Phase I SAP Modification #11 (May 24, 2017) – The modification proposed to complete pneumatic slug tests at monitoring wells installed as part of the Phase I Site Characterization. All tests will be conducted in accordance with the procedures outlined in the SOP titled "Standard Operating Procedure 4.8 for Conducting a Pneumatic Slug Test". The pneumatic slug testing program will be performed to evaluate the *in situ* permeability contrast between various hydrogeologic units beneath the Site. The pneumatic slug tests will generate data that will be used to determine the hydraulic conductivity at each well as part of the ongoing Phase I Site Characterization program.

The two field modifications and associated SOPs are being reviewed by USEPA and approval of the modifications is pending.

2.5 Investigation Derived Waste Management

Roux Associates provided USEPA sample results from three waste characterization water samples collected as part of the CFAC Phase I Site Characterization. Samples were collected in accordance with the Investigation Derived Waste (IDW) Management Plan dated May 9, 2016. The laboratory results and a plan for water disposal were provided in an e-mail to USEPA and to the Section Manager for Washington States Ecology's Waste 2 Resources Program on March 24, 2017. The results showed the IDW water (approximately 7,000 gallons of water) is non-hazardous. USEPA provided their concurrence with the sample results and plan for water disposal via email on April 4, 2017. Disposal of water IDW associated with the above referenced samples was completed in May 2017. The first load of water (approximately 5,000 gallons) was transported via tanker truck to Waste Management Graham Road Recycling and Disposal, 1820 S. Graham Road Medical Lake, WA 99022 on May 11, 2017, followed by the second load of water (approximately 2,000 gallons) on May 16, 2017, in accordance with the IDW Management Plan. Transport of the water was managed by Cascade Drilling. Two IDW containers still remain onsite for use during future sampling activities.

2.6 Weekly Reporting, Project Conference Calls, and Project Meetings

Roux Associates did not submit weekly reports in May 2017 because no field work was completed. Weekly reports will be submitted during the next reporting period pending the start of the fourth surface water and groundwater sampling event.

A conference call was held with the project team on May 15, 2017. Representatives from USEPA, CFAC, and Roux Associates were present for the call. The call was held to provide an update on the additional concrete sampling and path forward. Additionally, topics discussed included work progress and schedule.

3.0 WORK PLANNED FOR NEXT REPORTING PERIOD

This section summarizes the work planned for the next reporting period of June 2017.

3.1 Preparation of Response to Comments and Revised Reports

As described in Section 2.1, CFAC/Roux submitted responses to the comments provided by USEPA and MDEQ on the Data Summary Report and the SLERA on May 26, 2017. The response to comments are being reviewed by USEPA and MDEQ. Any further comments will be addressed during the next reporting period(s) as appropriate, following which CFAC/Roux will revise the two draft reports for re-submittal to the USEPA.

3.2 Groundwater and Surface Water Sampling

Results of the round three surface water and groundwater sampling will be compiled during the next reporting period and will provided to USEPA and MDEQ in a summary e-mail. A report summarizing the results of all four groundwater sampling events will be provided after round four of groundwater sampling is complete.

The fourth round of surface water and groundwater sampling will commence in June 2017. Samples will be collected in accordance with the RI/FS Work Plan, SAP, SAP Addendum, and any applicable SAP Modifications. Hydrometrics personnel will support Roux Associates in the sampling efforts. Results of the surface water and groundwater sampling will be presented in future data summary reports.

3.3 Investigation Derived Waste Disposal

Water IDW containers will remain onsite through the next reporting period for the fourth round of groundwater and surface water sampling. Waste characterizations samples from water IDW will be provided to USEPA and MDEQ for review following the completion of the fourth round of groundwater sampling. Based on the sample results, Roux Associates, with the support of Cascade Drilling, will coordinate water disposal in accordance with the IDW Management Plan.

3.4 Concrete Sampling and Data Evaluation

Sampling and laboratory analysis of concrete from the pot line floors and basements of the Main Plant building is planned to continue during the next reporting period, pending the approval

of the path forward outlined in the letter to USEPA, referenced in Section 2.3. The Scope of Work for the concrete sampling activities is described in the Concrete SAP. Results of the concrete sampling activities will be provided to the USEPA and MDEQ for review in letter summary reports after each sampling event.

3.5 Preparation of Risk Assessment Work Plans

During the next reporting period, Roux Associates and our subcontractor, EHS Support, will begin preparing the draft Baseline Human Health Risk Assessment and Baseline Ecological Risk Assessment Work Plans.

3.6 Summer 2017 Field Activities Scope of Work

During the next reporting period, CFAC and Roux Associates will receive comments or approval for the Field Modifications submitted to USEPA for pneumatic slug testing and Asbestos Landfill surface soil sampling, as discussed in Section 2.4. Pending USEPA approval of the Field Modifications, it is anticipated that the slug testing and Asbestos Landfill sampling will be performed in July through August 2017.

4.0 DATABASE UPDATES

Validation of laboratory data from the Phase I Site Characterization is being performed by Laboratory Data Consultants (LDC) as a subcontractor to Roux Associates. In May 2017, LDC provided Roux Associates nine sets of the remaining validated analytical data from round three of groundwater and surface water sampling. All nine sets of data were uploaded to the CFAC RI/FS database in May 2017 by Roux Associates.

Validated data will continue to be imported into the project database and managed in accordance with the data management procedures outlined in Section 7.10 of the QAPP. Future progress reports will discuss updates to the project database.

5.0 SCOPE/SCHEDULE REVISIONS

An updated Phase I Site Characterization schedule is attached to this Progress Report in Appendix A. The schedule was updated to reflect the progress as a result of the activities completed through May 2017. No changes to the schedule are expected at this time for the remaining Phase I Site Characterization tasks.

On behalf of CFAC, Roux Associates will continue to pursue the overall objectives described in the AOC and the RI/FS Work Plan. Roux Associates will continue to inform the USEPA of completed and upcoming activities pursuant to the requirements of the AOC in future progress reports.

Respectfully submitted,

ROUX ASSOCIATES, INC.

Michael Ritorto
Principal Hydrogeologist /
RI Project Manager

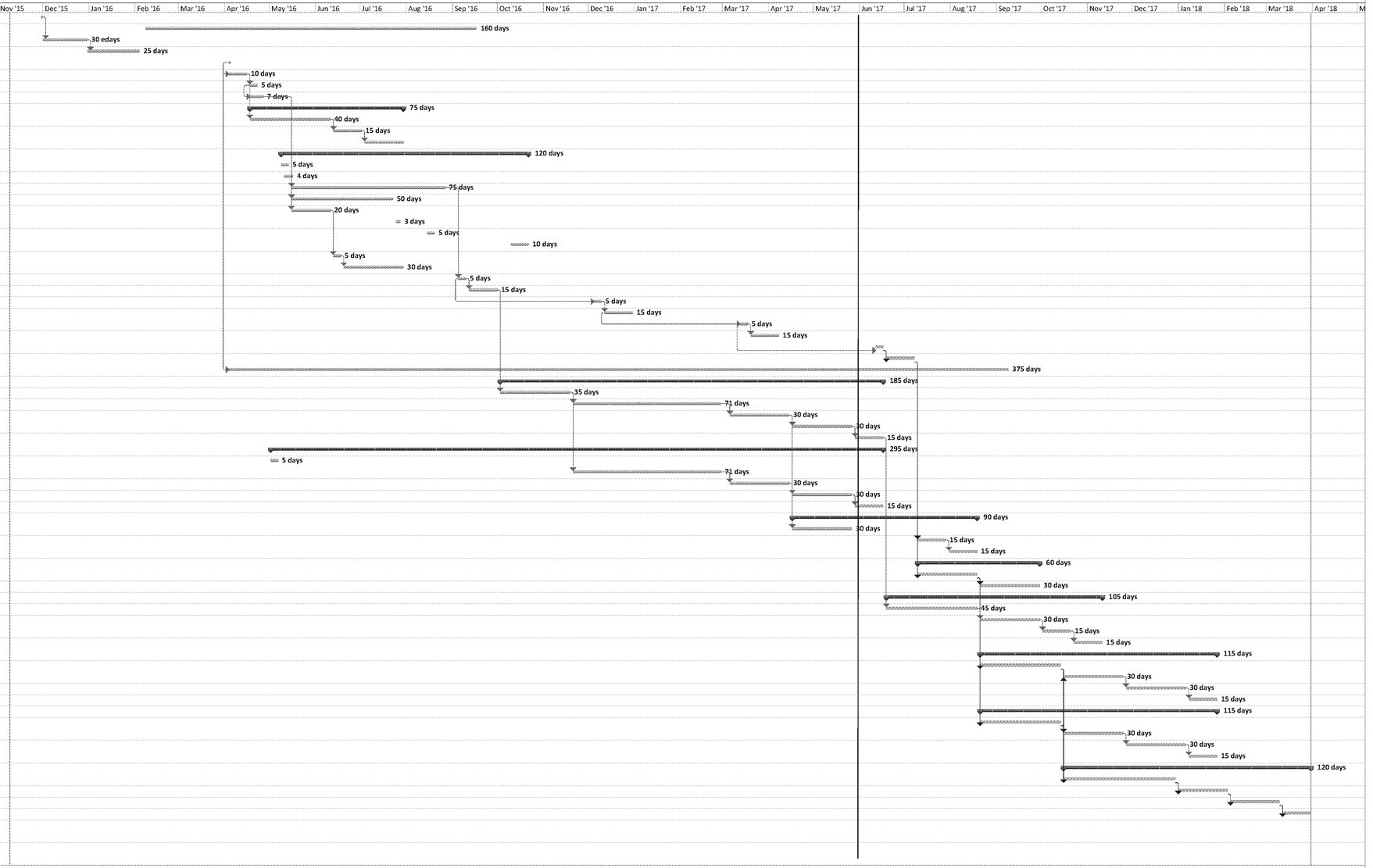
Andrew Baris
Vice President / Principal Hydrogeologist
RI/FS Project Manager

APPENDIX A

Project Schedule

CFAC RI/FS Schedule Updated JMay 31, 2017

ID	Deliverable	Task Name	Duration	Start	Finish	Company
1		AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC
2		Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux
3	X	Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux
4	X	Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux
5		Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16	
6		Pre-Intrusive Task 1 - Site Reconnaisance	10 days	Mon 4/4/16	Fri 4/15/16	Roux
7		Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux
8		Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux
9		**SAP Addendum**	**75 days**	**Mon 4/18/16**	**Fri 7/29/16**	**Roux**
10	X	Draft SAP Addendum	40 days	Mon 4/18/16	Fri 6/10/16	Roux
11		EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA
12	X	Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux
13		**Source Area Investigation - Phase I Site Characterization Field Activities**	**120 days**	**Mon 5/9/16**	**Fri 10/21/16**	**Roux/Hydrometrics**
14		GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux
15		Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux
16		Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux
17		Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux
18		Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics
19		Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux
20		Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux
21		Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics
22		Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics
23		Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics
24		Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics
25		Site-Wide Groundwater Sampling - Event 1	15 days	Mon 9/12/16	Fri 9/30/16	Roux/Hydrometrics
26		Site-Wide Surface Water Sampling - Event 2	5 days	Mon 12/5/16	Fri 12/9/16	Roux/Hydrometrics
27		Site-Wide Groundwater Sampling - Event 2	15 days	Mon 12/12/16	Fri 12/30/16	Roux/Hydrometrics
28		Site-Wide Surface Water Sampling - Event 3	5 days	Mon 3/13/17	Fri 3/17/17	Roux/Hydrometrics
29		Site-Wide Groundwater Sampling - Event 3	15 days	Mon 3/20/17	Fri 4/7/17	Roux/Hydrometrics
30		Site-Wide Surface Water Sampling - Event 4	5 days	Mon 6/12/17	Fri 6/16/17	Roux/Hydrometrics
31		Site-Wide Groundwater Sampling - Event 4	15 days	Mon 6/19/17	Fri 7/7/17	Roux/Hydrometrics
32		Investigation Derived Waste Management/Disposal	375 days	Mon 4/4/16	Fri 9/8/17	Roux
33		**Phase 1 Site Characterization Data Summary Report**	**185 days**	**Mon 10/3/16**	**Fri 6/16/17**	**Roux**
34		Data Validation Completion	35 days	Mon 10/3/16	Fri 11/18/16	Data Validator
35	X	Draft Phase I Site Characterization Summary Report to EPA/MDEQ	71 days	Mon 11/21/16	Mon 2/27/17	Roux
36		EPA review of Draft Phase I Data Summary Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA
37	X	Response to EPA/MDEQ Comments on Draft Phase I Data Summary Report	30 days	Mon 4/17/17	Fri 5/26/17	Roux
38	X	Final Phase I Summary Report to EPA/MDEQ	15 days	Mon 5/29/17	Fri 6/16/17	Roux
39		**Screening Level Ecological Risk Assessment (SLERA)**	**295 days**	**Mon 5/2/16**	**Fri 6/16/17**	**Roux**
40		Completion of SLERA Field Work	5 days	Mon 5/2/16	Fri 5/6/16	Roux
41	X	Draft SLERA Summary Report	71 days	Mon 11/21/16	Mon 2/27/17	Roux
42		EPA review of Draft SLERA Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA
43	X	Response to EPA/MDEQ Comments on Draft SLERA Summary Report	30 days	Mon 4/17/17	Fri 5/26/17	Roux
44	X	Final SLERA Report to EPA/MDEQ	15 days	Mon 5/29/17	Fri 6/16/17	Roux
45		**2017 Additional Field Activities**	**90 days**	**Mon 4/17/17**	**Fri 8/18/17**	
46		Preparation of 2017 field activities plan/SAP Mods	30 days	Mon 4/17/17	Fri 5/26/17	Roux
47		Pnuematic Slug Testing	15 days	Mon 7/10/17	Fri 7/28/17	Roux
48		Asbestos Landfill Soil Sampling	15 days	Mon 7/31/17	Fri 8/18/17	Roux/Hydrometrics
49		**Groundwater and Surface Water Sampling Data Summary Report**	**60 days**	**Mon 7/10/17**	**Fri 9/29/17**	
50		Validation of Round 4 sampling data	30 days	Mon 7/10/17	Fri 8/18/17	Data Validator
51	X	GW/SW Summary Report to EPA/MDEQ	30 days	Mon 8/21/17	Fri 9/29/17	Roux
52		**Candidate Technologies Memo**	**105 days**	**Mon 6/19/17**	**Fri 11/10/17**	
53	X	Draft Candidate Technologies Memo to EPA/MDEQ	45 days	Mon 6/19/17	Fri 8/18/17	Roux
54		EPA review of draft Candidate Technologies Memo	30 days	Mon 8/21/17	Fri 9/29/17	EPA
55	X	Response to EPA/MDEQ comments on Candidate Technologies Memo	15 days	Mon 10/2/17	Fri 10/20/17	Roux
56	X	Final Candidate Technologies Memo to EPA/MDEQ	15 days	Mon 10/23/17	Fri 11/10/17	Roux
57		**Baseline Human Health Risk Assessment Work Plan**	**115 days**	**Mon 8/21/17**	**Fri 1/26/18**	
58	X	Draft BHHRA Work Plan to EPA/MDEQ	40 days	Mon 8/21/17	Fri 10/13/17	Roux/EHS Support
59		EPA reivew of draft BHHRA Work plan	30 days	Mon 10/16/17	Fri 11/24/17	EPA
60	X	Response to EPA/MDEQ Comments on BHHRA Work Plan	30 days	Mon 11/27/17	Fri 1/5/18	Roux
61	X	Final BHHRA WP to EPA/MDEQ	15 days	Mon 1/8/18	Fri 1/26/18	Roux
62		**Baseline Ecological Risk Assessment Work Plan**	**115 days**	**Mon 8/21/17**	**Fri 1/26/18**	
63	X	Draft BERA Work Plan to EPA/MDEQ	40 days	Mon 8/21/17	Fri 10/13/17	Roux/EHS Support
64		EPA reivew of draft BERA Work Plan	30 days	Mon 10/16/17	Fri 11/24/17	EPA
65	X	Response to EPA/MDEQ Comments on BERA Work Plan	30 days	Mon 11/27/17	Fri 1/5/18	Roux
66	X	Final BERA Work Plan to EPA/MDEQ	15 days	Mon 1/8/18	Fri 1/26/18	Roux
67		**Phase II Remedial Investigation Sampling and Analysis Plan**	**120 days**	**Mon 10/16/17**	**Fri 3/30/18**	
68	X	Draft Phase II Sampling and Analysis Plan to EPA/MDEQ	55 days	Mon 10/16/17	Fri 12/29/17	Roux
69		EPA reivew of draft Phase II Sampling and Analysis Plan	25 days	Mon 1/1/18	Fri 2/2/18	EPA
70	X	Response to EPA/MDEQ Comments on Phase II Sampling and Analysis Plan	25 days	Mon 2/5/18	Fri 3/9/18	Roux
71	X	Final Phase II Sampling and Analysis Plan	15 days	Mon 3/12/18	Fri 3/30/18	Roux



Scheduled Task | Task Progress Complete | Summary